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| FROM: | Monte L. Falcoff |

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COMMENTS:

The attached proposed amendment is for a personal interview on Tuesday, 11/16/04.

**11/16/04 PROPOSED AMENDMENT**
**USSN 10/791,403**
**0275M-000260/DVD**

1. (currently amended) A method of manufacturing a joint by operating a riveting system having a riveting tool, a self-piercing rivet, and automotive vehicle panels, the riveting tool including an electric motor and a rivet punch, the method comprising:

(a) determining if the self-piercing rivet is located in the riveting tool;

(b) moving the self-piercing rivet to the riveting tool if step (a) is negative;

(c) energizing the electric motor to advance the self-piercing rivet;

(d) rotating a portion of the electric motor in response to step (c);

(e) converting the rotation of step (d) to linear displacement of the rivet punch;

(f) the rivet punch pushing against a solid head of the self-piercing rivet during insertion into the automotive vehicle panels;

(g) advancing the self-piercing rivet into an unpierced portion of the automotive vehicle panels, in response to step (e), without fluid actuation in the riveting tool;

(h)[[(g)]] outwardly diverging a leading end of the self-piercing rivet during insertion of the self-piercing rivet into the automotive vehicle panels;

(i)[[(h)]] preventing the self-piercing rivet from completely piercing through a die side one of the automotive vehicle panels; and

(i)[[(i)]] determining displacement associated with the rivet punch as a function of actuation speed used to insert the self-piercing rivet.

5. (currently amended) The method of claim 1 further comprising comparing [the] real-time sensed displacement associated with the rivet punch to prestored displacement values.

7. (currently amended) A method of manufacturing a joint by operating a riveting system having a riveting tool, a C-frame, a die, a self-piercing rivet, and automotive vehicle panels, the riveting tool including an electric motor and a rivet punch, the method comprising:

(a) robotically moving the C-frame to align a joint area of the automotive vehicle panels between the rivet punch and the die;

(b) inserting a self-piercing rivet to the riveting tool;

(c) rotating a portion of the electric motor;

(d) linearly moving the rivet punch in a fluid-free manner;

(e) clamping the automotive vehicle panels together in an area substantially surrounding the joint area;

(f)[[(e)]] punching the self-piercing rivet into a solid portion of the automotive vehicle panels;

(g)[[(f)]] using the die to outwardly diverge a leading end of the self-piercing rivet during insertion of the self-piercing rivet into the automotive vehicle panels, always keeping the rivet punch and die coaxially aligned during use of the riveting tool;

(h)[[(g)]] preventing the self-piercing rivet from completely piercing through a die side one of the automotive vehicle panels; and

(i)[[(h)]] sensing real-time velocity of a component coupled to at least one of: the electric motor and the rivet punch.

13. (currently amended) A method of manufacturing by operating a riveting system including an electric motor, a belt, a transmission, a punch, a die, a workpiece clamp, a C-frame, and a self-piercing rivet, the method comprising:

(a) stationarily attaching the die to the C-frame;

(b) sensing if the self-piercing rivet has been fed adjacent to the punch;

(c) rotating a portion of the electric motor;

(d) rotating the belt in response to rotation of the electric motor;

(e) rotating a portion of the transmission in response to rotation of the belt;

(f) linearly displacing the punch in response to rotation of the portion of the transmission;

(g) linearly advancing the workpiece clamp;

(h) using the punch to directly contact against and linearly push a solid head of the self-piercing rivet;

(i) using the die to outwardly diverge a leading end of the self-piercing rivet while preventing the self-piercing rivet from contacting directly against the die, always keeping the rivet punch and die coaxially aligned during use of the riveting tool;

(j) sending a signal between a computer controller and a sensor, and the sensor sensing a characteristic associated with the electric motor; and

(k)[[(j)]] electronically comparing a sensed and real-time action associated with operation of at least one of: the electric motor, the transmission, and the punch, to at least one pre-programmed value.

15. (original) The method of claim 13 further comprising clamping a pair of aluminum, automotive vehicle panels together in an area substantially surrounding the riveting area.

16. (original) The method of claim 13 further comprising inserting the self-piercing rivet into an unpierced area of automotive vehicle panels to be joined.

21. (new) A method of manufacturing attached automotive vehicle workpieces with a riveting tool, a frame, a die, and a self-piercing rivet, the method comprising:

(a) robotically moving the frame to align a joint area of the automotive vehicle panels between a rivet punch of the riveting tool and the die, the rivet punch and die always being coaxially aligned during use of the riveting tool;

(b) supplying the self-piercing rivet to the riveting tool;

(c) rotating a portion of an electric motor of the riveting tool;

(d) linearly moving the rivet punch in a fluid-free manner;

(e) clamping the automotive vehicle workpieces together adjacent a solid portion of the automotive vehicle workpieces to be attached;

(f) pushing the self-piercing rivet into the solid portion of the automotive vehicle workpieces;

(g) using the die to outwardly diverge a leading end of the self-piercing rivet during insertion of the self-piercing rivet into the automotive vehicle workpieces;

(h) preventing the self-piercing rivet from completely piercing through a die side one of the automotive vehicle workpieces; and

(i) sensing a real time value of the electric motor during riveting operation and automatically comparing the real time value to a desired, stored value.